AMENDMENTS TO THE SPECIFICATION:

Please amend the paragraph beginning at page 1, line 10, as follows:

Mobile cellular communication networks employ multiple access schemes in which inter-symbol interference (ISI) needs to be combated through equalisation. Obvious embodiments are the TDMA (Time Division Multiple Access) based GSM (Global System for Mobile Telecommunications), now evolving into the enhanced data rates for GSM, GSM/EDGE Radio Access Network (GERAN), and the TD-CDMA (Time Division Code Division Multiple Access) based UTRA-TDD (UMTS Terrestrial Radio Access Time Division Duplex) network. The description below uses GSM terminology ~~to exemplify~~ as an example, but the invention is not limited to GSM. The invention particularly relates to encoding and decoding of multi-layered signals transmitted over a Multiple-Input Multiple-Output (MIMO) frequency selective channel.

Please amend the paragraph beginning at page 7, line 25, as follows:

~~In a document by~~ Lindskog and Paulraj [7] ~~they~~ present a space-time block code for two transmit antennas ~~that uses an approach similar to the one considered in this invention~~. As code block for the space-time block-code, they define a radio burst, where the left data field is one symbol in the space-time block-code and the right data field the second space-time block-coding symbol. These two space-time block-coding symbols are transmitted from both transmit antennas and are separated in time by the training sequence. ~~However, compared to the present invention~~ In contrast to the approach described above where multiple layers of independent data provides increased bit rates, the method of Lindskog and Paulraj transmits the same data on both transmit antennas, and therefore does not offer increased bit rates, only increased diversity. Further, by using the training sequence to separate the space-time block coding symbols, orthogonality within the space-time code block is ensured, which enables a low complexity decoding of the

space-time code.~~;~~ ~~whereas this invention~~ In contrast, the approach described above allows separate detection of each of the multiple layers.

Please amend the paragraph beginning at page 8, line 27, as follows:

Using the diagonally layered multi-antenna transmission scheme ~~proposed in this invention~~ described above, inter-symbol interference (ISI) between different layers is avoided. This allows the receiver to demodulate and decode the layers sequentially. A complete layer is demodulated (including equalisation) and decoded, before it is cancelled from the received signal. Thereafter the next layer is demodulated and decoded, and so forth. Using diagonal layering without consideration of ISI between layers the receiver will not be able to demodulate and decode a complete layer before cancelling it. In this case the complete sequence of symbols transmitted from one antenna would have to be demodulated and cancelled. This means that only parts of each layer is demodulated before cancellation, which is performed before decoding. Being able to perform decoding before cancellation reduces the amount of errors, and thus the effect of error propagation, which may occur when a cancelled layer contains estimation errors.